

4789

SN 09/933,586

REMARKS

Claims 55-79 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Feeley et al. (US 5,792,436) in view of Hepburn et al. (US 5,837,212). This rejection is respectfully traversed on the basis of the amendments to the claims and the remarks set forth below.

Feeley et al. are concerned with a regenerable catalyzed trap for removing a sorbable component such as SO_x or PO_x from a lean gas stream. Regeneration of the sorbent occurs by thermally desorbing the sorbable component from the trap (col. 8, lines 38-42). Admittedly, Feeley et al. do mention sorbing the SO_x from the lean gas stream, then passing the SO_x depleted gas stream to a NO_x abatement catalyst in a first zone and thereafter disposing the SO_x in a second zone (col. 2, lines 27-52). However, Feeley et al. do not teach or even hint as to how the NO_x abatement catalyst may be rejuvenated. Indeed, Feeley et al. teach that the effective operating temperature of the NO_x abatement catalyst should be maintained below the desorbing temperature of the SO_x (col. 2, lines 42-48). If Feeley et al. attempted to thermally regenerate the NO_x abatement catalyst, such catalyst would relatively quickly become inactivated at such desorbing temperatures.

In Example 2, Feeley et al. do utilize a Mn/Pt catalyst, but this is clearly not the same as the rejuvenation of a catalyst that did not have any manganese in it to begin with. Furthermore, there is no mention of any NO_x abatement catalyst employed in such example. The whole thrust of the Feeley et al. Example 2 is to show that combustible hydrocarbons in the gas stream can be used to generate local hot spots that in turn will permit the desorption of the SO_x (col. 13, lines 58-61).

Hepburn et al. disclose the use of a potassium/manganese trap for absorption of nitrogen oxides. Hepburn et al. state that when the manganese component is loaded onto the potassium, sulfur poisoning of the catalyst is reduced. However, if Feeley et al. is modified by the teachings of Hepburn et al., then the combination of the references would teach that a potassium/manganese trap should be thermally rejuvenated. Moreover, Hepburn et al. state that a precious metal component should not be present in the trap (col. 1, line 65 et seq.) whereas claim 55 as amended requires that the spent catalyst to be

4789

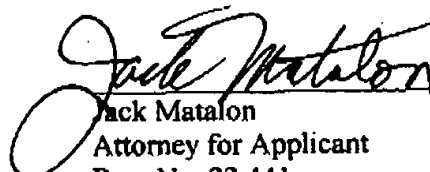
SN 09/933,586

rejuvenated must contain a precious metal component as well as an alkali metal component such as potassium.

Deeba et al. (US 5,874,057) is irrelevant in respect to the rejuvenation of a spent nitrogen oxide abatement catalyst. Deeba et al. merely recite the parameters of the catalyst and applicants conceded that the composition of the nitrogen oxide catalyst itself is known in the art.

The current invention is directed to the rejuvenation of a nitrogen abatement catalyst that has become spent over time, e.g., the catalyst has been used in a catalytic muffler in an automobile that now has traveled 100,000 mile and the catalyst is no longer active. None of the cited prior art, alone or in combination teach, or even hint at a process for rejuvenation of a spent nitrogen abatement catalyst that contains both a precious metal component as well as a nitrogen oxides sorbent. Accordingly, the examiner is respectfully requested to reexamine the claims as amended and pass this application to issue..

Respectfully submitted,



Jack Matalon
Attorney for Applicant
Reg. No. 22,441
Tel: (973) 467-5626

Engelhard Corporation
101 Wood Ave. - P.O. Box 770
Iselin, NJ 08830-0770
Tel: (732) 205-7125